

# GlyGen

## A Resource for Mining Glycoscience Data



**PI: Michael Tiemeyer**  
CCRC, University of Georgia

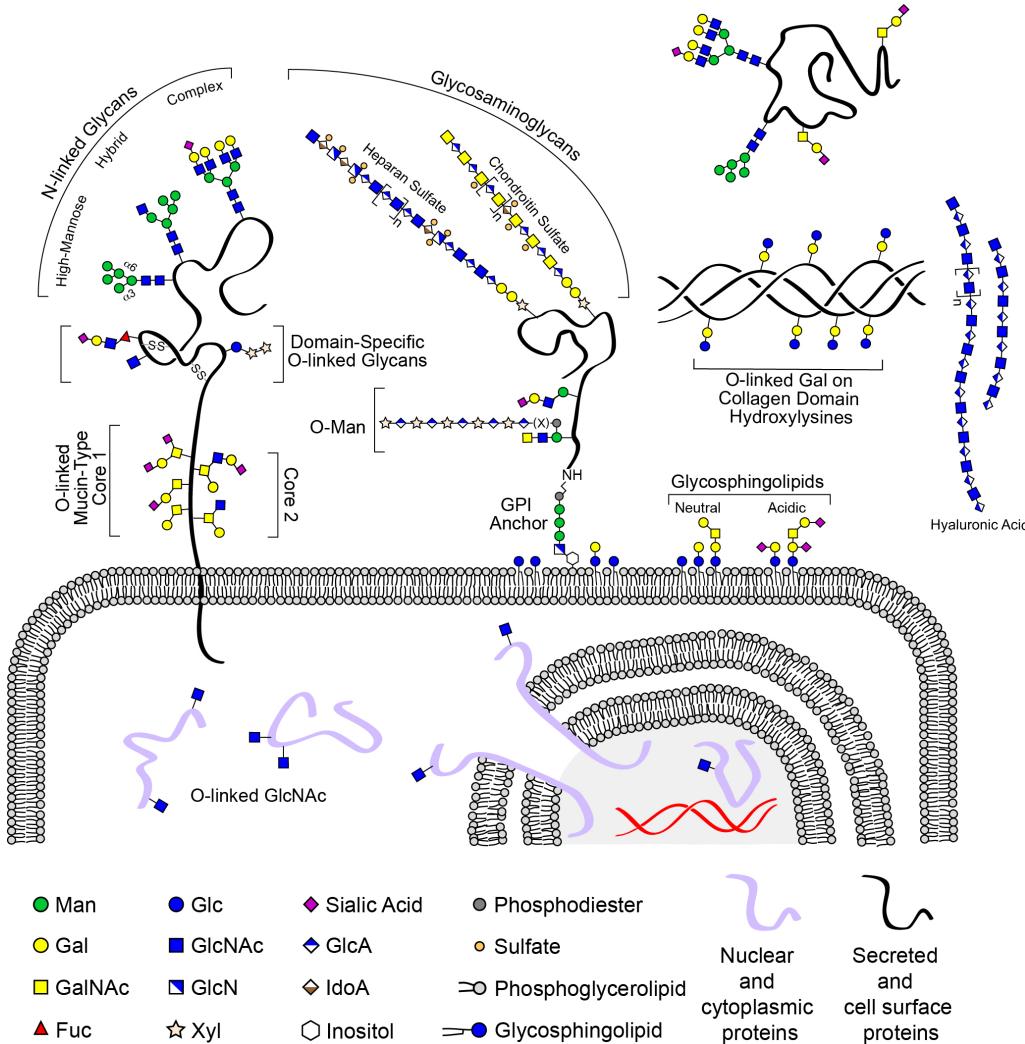


NIH Common Fund Glycoscience Program  
1U01GM125267-01 (York & Mazumder)



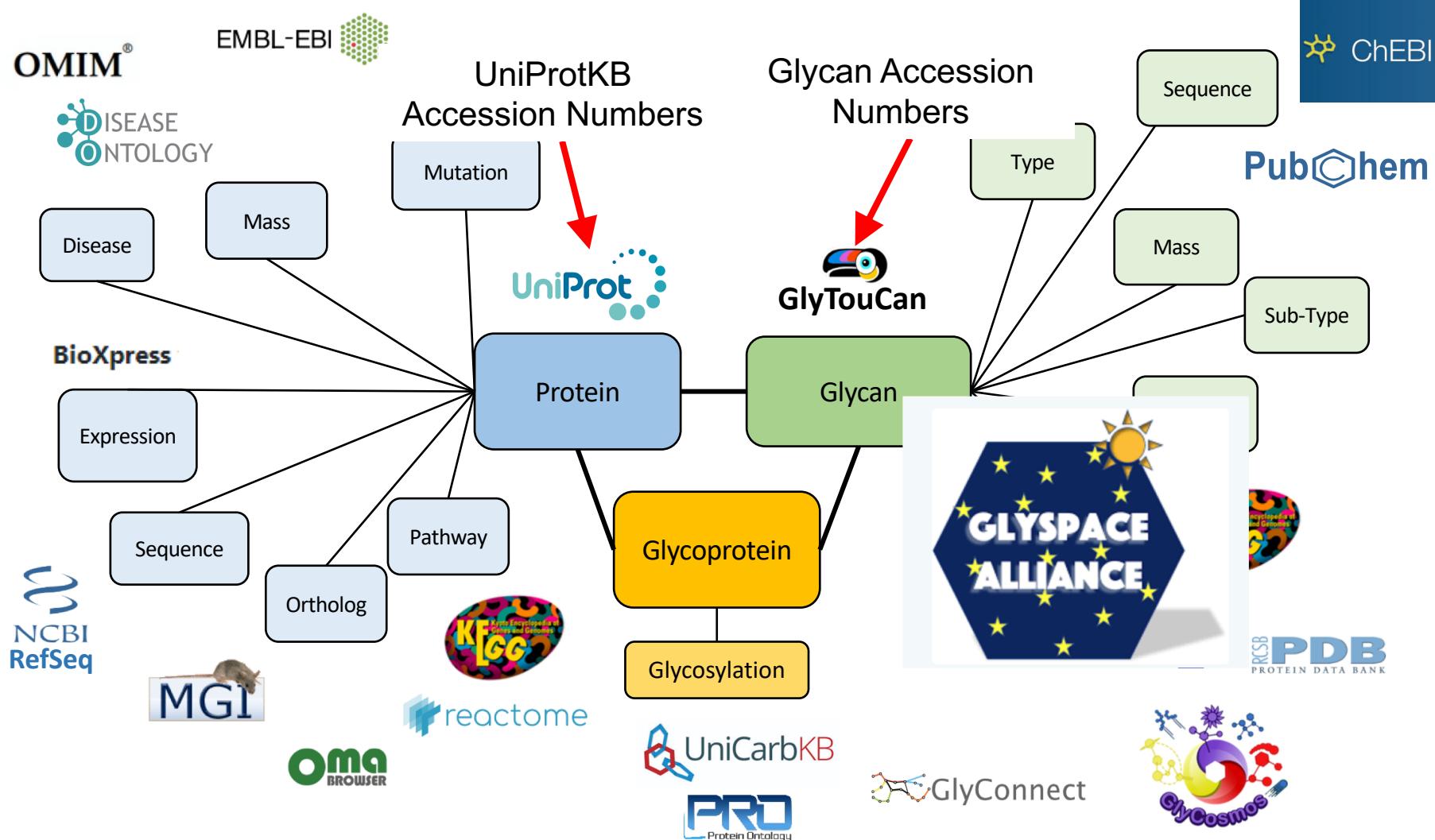
**PI: Raja Mazumder**  
The George Washington University

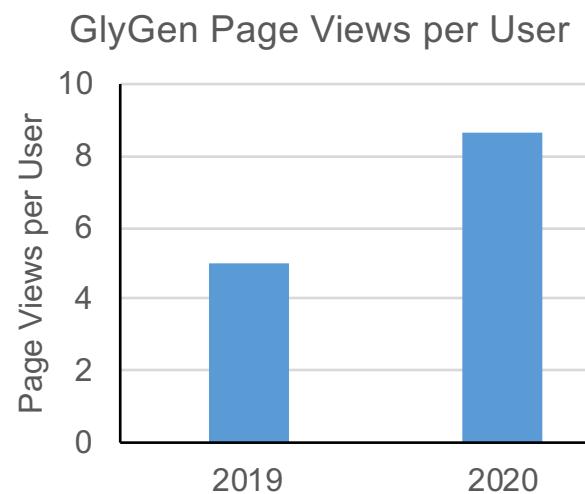
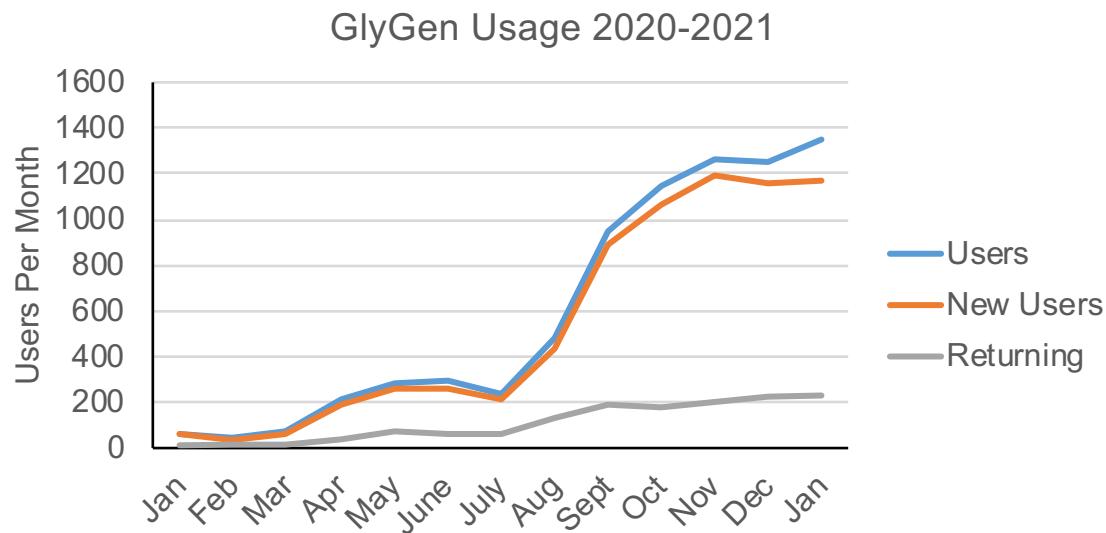




- Glycoconjugates, whether secreted from cells or found at the surface or inside of cells, regulate essential functions in health and disease
- Almost all currently marketed biologic pharmaceuticals are glycoproteins (antibodies, growth factors, enzyme replacements)
- Glycan structural features influence glycoconjugate functions
- Where is this data captured? Can it be harvested in a way that is informative and that may reveal new knowledge?

# Sources of data currently integrated into GlyGen





**New Features** in most recent release of GlyGen (v1.8, Apr. 2021)

- GlyGen Mapper
  - Map glycan and protein IDs across different namespaces
- GlyGen Super Search
  - Connect concepts to acquire customized information
- GlyGen Site Search
  - High resolution information about modifications at specific protein sites

# The Home Page

GlyGen

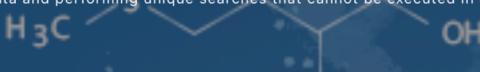
HOME EXPLORE ▾ QUICK SEARCH TRY ME DATA ▾ TOOLS ▾ HELP ▾ MORE ▾

Search...



## GlyGen: Computational and Informatics Resources for Glycoscience

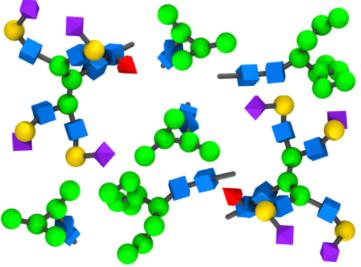
GlyGen is a data integration and dissemination project for carbohydrate and glycoconjugate related data. GlyGen retrieves information from multiple international data sources and integrates and harmonizes this data. This web portal allows exploring this data and performing unique searches that cannot be executed in any of the integrated databases alone.



HOW TO CITE

QUICK START

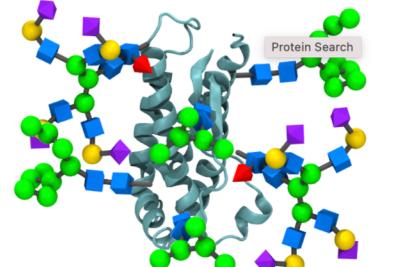
OUR MISSION



### Glycan Search

Search for glycan structures based on their chemical and structural properties.

EXPLORE



### Protein Search

Search for proteins based on their sequences, accessions, and annotations.

EXPLORE



NEW

### Site Search

Search for proteins based on their site and site annotations.

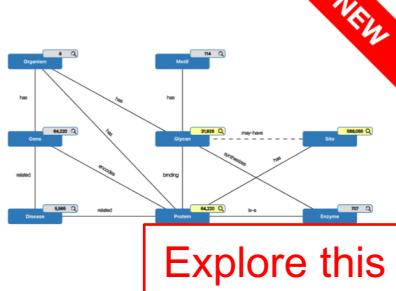
EXPLORE



### Quick Search

Quick Search provides multi-domain queries that are based on user requests.

EXPLORE



Explore this

### Super Search

Super search is a graphical interface to build queries across all GlyGen datasets.

EXPLORE

NEW

### GlyGen Mapper

ID mapping related to glycan, protein / glycoprotein and based on the user input.

EXPLORE

### Version

Portal: 1.8 (19/Apr/2021)  
Webservice: 1.8.48 (22/Apr/2021)  
Data: 1.8.25 (19/Apr/2021)

### Your Opinion Matters



Please provide feedback and suggestions to help us improve the GlyGen portal and make it more useful for the community.

LEAVE FEEDBACK

### Database Statistics

#### Homo sapiens

Glycans	15855
Proteins	20609
Glycoproteins	9199

#### Mus musculus

Glycans	5842
Proteins	21989
Glycoproteins	3891

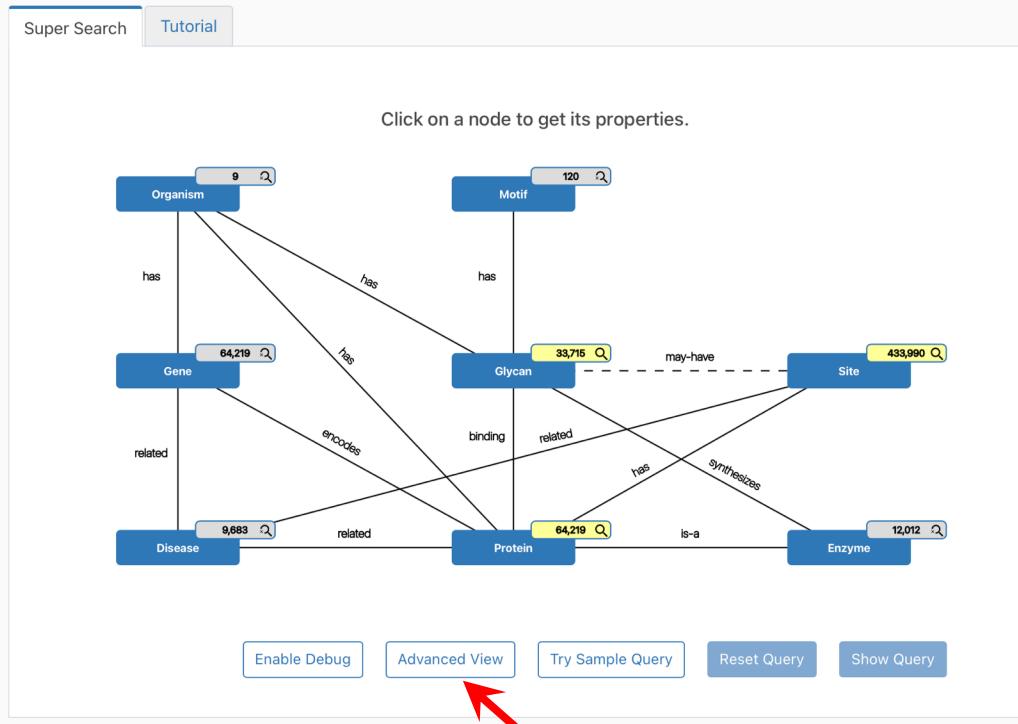
#### Rattus norvegicus

Glycans	4091
Proteins	21587
Glycoproteins	2111

#### Severe acute respiratory syndrome coronavirus 2

Glycans	1569
Proteins	17

## Super Search

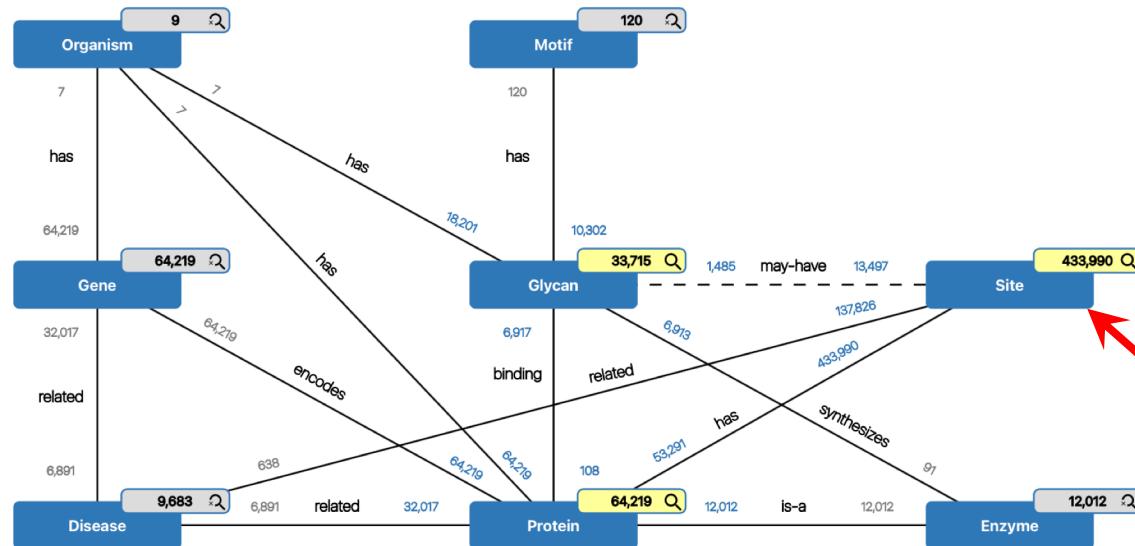


# Super Search

Super Search

Tutorial

Click on a node to get its properties.



Enable Debug

Simple View

Try Sample Query

Reset Query

Show Query

# Super Search

Super Search

Tutorial

Click on a node to get its properties.

Organism

9

Motif

120

Add site properties to search

Site Sequence

Start Position



End Position



Single Nucleotide Variation

Glycosylation



Mutagenesis



Cancel

Clear Fields

Search



# Super Search

Super Search    Tutorial

Click on a node to get its properties.

Organism    9    Motif    120

Add site properties to search

Site Sequence    =    N    +    -    ↓

And    Glycosylation    =    true    +    -    ↑

↓

And    Single Nucleotide Variation    =    true    +    -    ↑

↓

Cancel    Clear Fields    Search

The screenshot shows the 'Super Search' interface with a blue header bar. Below it is a search bar with two dropdowns: 'Organism' (9 results) and 'Motif' (120 results). A central message says 'Click on a node to get its properties.' The main area is titled 'Add site properties to search' and contains three rows of search criteria. Each row has an 'And' dropdown, a search term, an operator dropdown ('='), a value input field, and a set of control buttons (+, -, up, down arrows, and a delete icon). Red arrows point to the 'Glycosylation' term in the second row and the 'Single Nucleotide Variation' term in the third row. At the bottom are 'Cancel', 'Clear Fields', and 'Search' buttons.

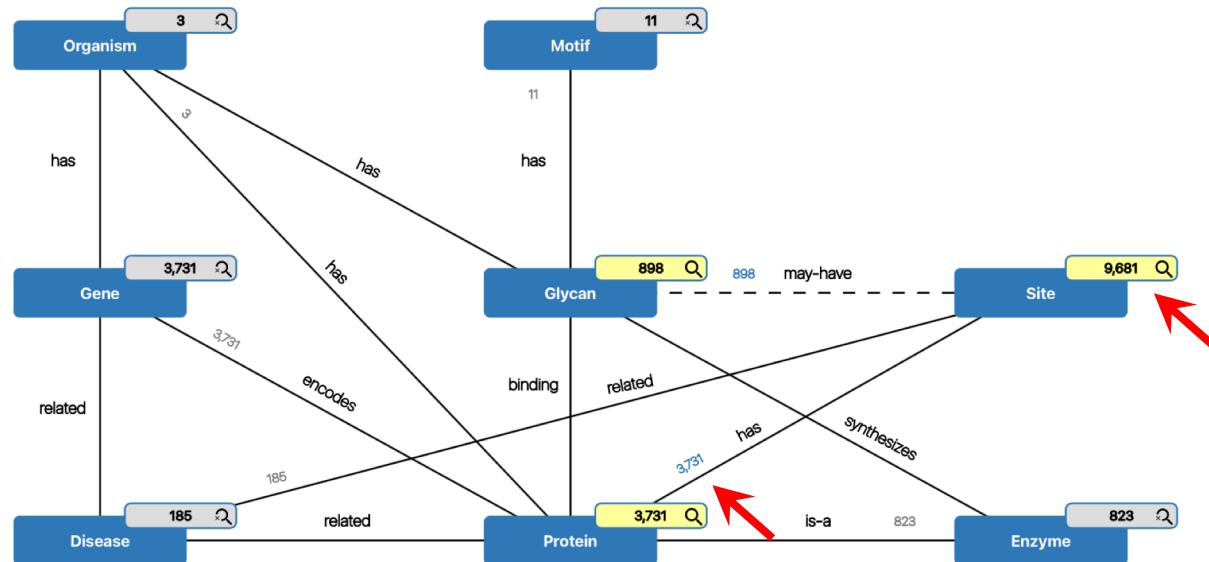
Show me all N-linked glycosylation sites that are impacted by a change in the Asn residue of the NXS/T/C sequon

# Super Search

Super Search

Tutorial

Click on a node to get its properties.



Enable Debug

Simple View

Try Sample Query

Reset Query

Show Query

**Site Search Summary**

Performed on: 2021/04/29 22:51:05  
Super search query.

[Update Results](#) [Modify Search](#)

\*\* To perform the same search again using the current version of the database, click "Update Results".

Records per page 20 Showing 1 to 20 of 9681 Results

DOWNLOAD ▾

[1](#) [2](#) [3](#) [4](#) [5](#) [>](#) [>>](#)

UniProtKB Accession ↑↓	Hit Score ↑↓	Start Pos ↑↓	End Pos ↑↓	SNV	Glycosylation	Mutagenesis	Glycation	Phosphorylation
P27487-1	11.13	281	281	YES	YES	YES	NO	NO
Q9Y231-1	11.13	101	101	YES	YES	YES	NO	NO
Q15116-1	11.13	49	49	YES	YES	YES	NO	NO
Q10589-1	11.13	65	65	YES	YES	YES	NO	NO
Q02083-1	11.13	333	333	YES	YES	YES	NO	NO
Q8IWT6-1	11.13	66	66	YES	YES	YES	NO	NO
Q13510-1	11.13	348	348	YES	YES	YES	NO	NO
O60635-1	11.13	178	178	YES	YES	YES	NO	NO
Q9NUN5-1	11.13	448	448	YES	YES	YES	NO	NO
Q9H306-1	11.13	110	110	YES	YES	YES	NO	NO
Q9BXJ7-1	11.13	35	35	YES	YES	YES	NO	NO
Q8NCC3-1	11.13	398	398	YES	YES	YES	NO	NO
Q5VUB5-1	11.13	190	190	YES	YES	YES	NO	NO
Q8IWT6-1	11.13	83	83	YES	YES	YES	NO	NO

Explore this

Feedback

General
Glycosylation
Names
Function
Sequence
Single Nucleotide Variation
Mutagenesis
GO Annotation
Glycan Ligands
PTM Annotation
Proteoform Annotation
Pathway
Synthesized Glycans
Isoforms
Homologs
Disease
Expression Tissue
Expression Disease
Cross References
History
Publications

Explore this

LOOK AT

## Details For Glycoprotein P27487-1

Back

DOWNLOAD ▾

### General

Gene Name: DPP4

Gene Location: Chromosome: 2 (162,074,542 - 161,992,241)

Ensembl Gene 1

UniProtKB ID: DPP4\_HUMAN

UniProtKB Accession: P27487-1

Protein Length: 766

UniProtKB Entry Name: Dipeptidyl peptidase 4 membrane formDipeptidyl peptidase 4 soluble formDipeptidyl peptidase 4

Chemical Mass: 88,279 Da

RefSeq Accession: NP\_001926.2

RefSeq Name: dipeptidyl peptidase 4 isoform 1

Organism: Homo sapiens (Human) [9606]

UniProtKB 1

### Glycosylation

ProtVista

Types of data available on the detail page

Feedback

**General**

**Glycosylation**

**Names**

**Function**

**Sequence**

**Single Nucleotide Variation**

**Mutagenesis**

**GO Annotation**

**Glycan Ligands**

**PTM Annotation**

**Proteoform Annotation**

**Pathway**

**Synthesized Glycans**

**Isoforms**

**Homologs**

**Disease**

**Expression Tissue**

**Expression Disease**

**Cross References**

**History**

**Publications**

Highlights the key finding that the S1 domain of COVID-19 spike glycoprotein potentially interacts with the human CD26 Publication Status: Online-Only  
Plasma levels of DPP4 activity and sDPP4 are dissociated from inflammation in mice and humans. Publication Status: Online-Only

RefSeq 1

### Sequence

ProtVista

+10 +20 +30 +40 +50

```

1 MKTPWKVLLG LLGAALVTI ITPVVLNNK GTDDATADSR KTYTLDYKL NTYRLKLYSL
61 RWISDHELYL KQENNILVFN AEYGNSSVFL ENSTFDEGH SINDYSISPD GQFILLEVN
121 VKQWRSYTA SYIDIYDLNRQ QLITEERIPN NTQWWTSPV GHKLAYVMNN DIYVKIEPNL
181 PSYRITWTGK EDIYNGITD WYYEEEVFSA YSALWWSPNG TFLAYAQFND TEVPLIEYSF
241 YSDESLOQYPK TVRVPPVPKG AVNPTVKFFF VNNTDSLSSVT NATSIQITAP ASMLIGDHYL
301 CDVWTAWOER ISLQLWRRRIQ NYNSVMDICDY DESSGRWNCL VARQHIMST TGWVGRFRPS
361 EPHFTLDGNS FYKISNEEG YRHICYFQID KKDCTFITKG TWEVIGIEAL TSDYLYIISN
421 EYKGMPGGRN LYKIQQLSDYT KVTCCLSCELN PERCQYYSVS FSKEAKYYQL RCSGPGLPLY
481 TLHSSVYAGP CSQKADTVFR LNWTAYLAST ENIVIASFDG RGGYQGDKI MHAINRRLGT
541 PLLLDVYAGP CSQKADTVFR LNWTAYLAST ENIVIASFDG RGGYQGDKI MHAINRRLGT
601 FEVEDQIEAA RQFSKMGFVD NKRIAIWGS YGGYVTSMLV GSGSGVFKCG IAVAPVSRWE
661 YYDSVYTERY MGLPTPEDNL DHYRNSTVMS RAENFKOVEY LLIHGHTADDN VHFOQSQAIS
721 KALVDVGVDQ QAMWYTDDEH GIASSSTAHQH IYTHMSHFIK QCFSLP

```

N-linked Sites 12

O-linked Sites

Variation from mutation 32

Sequon 9

Explore this

### Single Nucleotide Variation

ProtVista

Disease associated Mutations Non-disease associated Mutations

Records per page 20 Showing 1 to 20 of 20 Results

gnomAD 1						
dbSNP 1	Germline mutation passed 1 out of 1 filters: n-glyco-sequon-loss (NAT->HAT).	Chr2:162033587T>	281	281	N → H	
ExAC 1						
gnomAD 1						

General
Glycosylation
Names
Function
Sequence
Single Nucleotide Variation
Mutagenesis
GO Annotation
Glycan Ligands
PTM Annotation
Proteoform Annotation
Pathway
Synthesized Glycans
Isoforms
Homologs
Disease
Expression Tissue
Expression Disease
Cross References
History
Publications

Sequence
ProtVista
^

+10      +20      +30      +40      +50

```

1 MKTPWKVLLG LLGAAALVTI ITPVPVLLNK GTDATADSR KTYTLTDYLK NTYRLKLYSL
61 RWISDHELYL KQNNILFVN AEGYNSVFL ENSTDFEGH SINDYSISPD QFLILEVN
121 VKQRWHSYTA SYDIYDLNKR QLITEERIN NTWTWSPV GHKLAYVWNNIVYKIEPNL
181 PSYRITWTGK EDIYNGITD WYEEEVFSA YSALWWSPNG TFLAYAQFND TEVYVSF
241 YSDESLOQPK TVRVPYPKAG AVNPTVKFV VNTDSLSSV NATSIQITAP ASMLIDHYL
301 CDWTWATQER ISLQLRRIQ NSYMDICDY DESSGRWNL VARQHIEMT TGWGRFRPS
361 EPHFTLDGNS FYKISNEEG YRHICYFQID KKDCTFITKG TWEVIGEAL TSDYLYIISN
421 EYKGMGPGRN LYKIQLSDYT KVTCLSCELN PERCQYSSV FSKEAKYYQL RCGSPGLPLY
481 TLHSSVNDKG LRVLEDNSAIDKMLQNQMP SKKLDFIIN ETKFWYQMIL PPHFDKSKKY
541 PLLLDVYAGP CSQKADTVFR LNWTAYLAST ENIVIASFGD RGSGYQDGK1 MHAINRRLGT
601 FEVEDQIEAA RQFSKMGFVD NKRIAIWGWS YGGVVTSMVL GSGSGVFKCG IAVAPVRE
661 YYDSVSYTERY MGLPTPEDND DHYRNTVMS RAENFKOVEY LLIHGTADNN VHFQQSAQS
721 KALDVGVDF QAMWYTEDH GIASSTAHOH IYTHMSHFIK QCFSLP

```

N-linked Sites 12
 O-linked Sites
 Variation from mutation 32
 Sequon 9

Explore this

Single Nucleotide Variation
ProtVista
^

Disease associated Mutations Non-disease associated Mutations

Records per page 20 ▾ Showing 1 to 19 of 19 Results

Source	Mutation Passes	Chromosome	Position 1	Position 2	Change	Associated Diseases
dbSNP 1	1 out of 6 filters: n-glyco-sequon-loss (NST->NSI).					
ExAC 1						
TOPMed 1						
gnomAD 1						
BioMut 1	Somatic mutation passed 1 out of 6 filters: n-glyco-sequon-gain (NDI->NDS).	Chr2:162894910	172	172	I → S	• kidney cancer (DOID:263)
BioMut 1	Somatic mutation passed 1 out of 6 filters: patient freq. (2.0%).	Chr2:162891766	228	228	F → L	• breast cancer (DOID:1612)
BioMut 1	Somatic mutation passed	Chr2:162891760	230	230	D → N	• stomach cancer (DOID:10534) • uterine cancer (DOID:262)

Feedback

New Features in most recent release of GlyGen (v1.8, Apr. 2021)

- GlyGen Mapper
  - Map glycan and protein IDs across different namespaces
- GlyGen Super Search
  - Connect concepts to acquire customized information
- GlyGen Site Search
  - High resolution information about modifications at specific protein sites

# The Home Page

GlyGen

HOME EXPLORE ▾ QUICK SEARCH TRY ME DATA ▾ TOOLS ▾ HELP ▾ MORE ▾

Search...



## GlyGen: Computational and Informatics Resources for Glycoscience

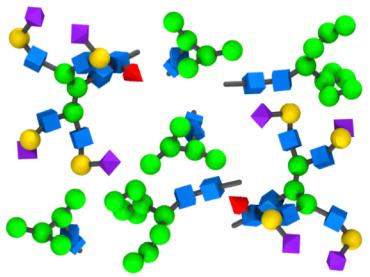
GlyGen is a data integration and dissemination project for carbohydrate and glycoconjugate related data. GlyGen retrieves information from multiple international data sources and integrates and harmonizes this data. This web portal allows exploring this data and performing unique searches that cannot be executed in any of the integrated databases alone.



HOW TO CITE

QUICK START

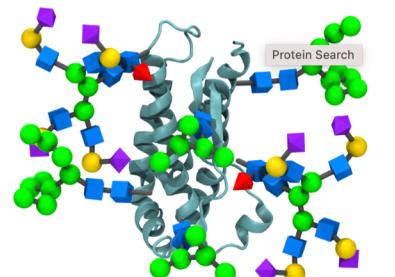
OUR MISSION



### Glycan Search

Search for glycan structures based on their chemical and structural properties.

EXPLORE



### Protein Search

Search for proteins based on their sequences, accessions, and annotations.

EXPLORE



### Site Search

Search for proteins based on their site and site annotations.

NEW

Explore this

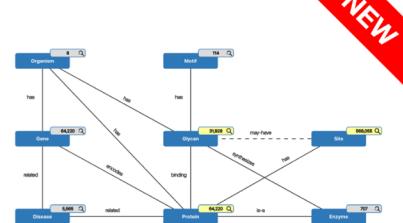
EXPLORE



### Quick Search

Quick Search provides multi-domain queries that are based on user requests.

EXPLORE



### Super Search

Super search is a graphical interface to build queries across all GlyGen datasets.

EXPLORE

Select Molecule  
Glycan  
Protein

Select From ID Type  
BCSDB  
CFG  
CarbBank  
ChEBI  
GlyConnect  
...

Select To ID Type  
KEGG Glycan  
MatrixDB  
PDB  
PubChem Compound  
PubChem Substance  
...



### GlyGen Mapper

ID mapping related to glycan, protein / glycoprotein and based on the user input.

NEW

EXPLORE

### Version

Portal: 1.8 (19/Apr/2021)

Webservice: 1.8.48 (22/Apr/2021)

Data: 1.8.25 (19/Apr/2021)

### Your Opinion Matters



Please provide feedback and suggestions to help us improve the GlyGen portal and make it more useful for the community.

LEAVE FEEDBACK

### Database Statistics

#### Homo sapiens

Glycans	15855
Proteins	20609
Glycoproteins	9199

#### Mus musculus

Glycans	5842
Proteins	21989
Glycoproteins	3891

#### Rattus norvegicus

Glycans	4091
Proteins	21587
Glycoproteins	2111

#### Severe acute respiratory syndrome coronavirus 2

Glycans	1569
Proteins	17



## Site Search

[Site Search](#) [Tutorial](#)[Clear Fields](#)[Search Protein Site](#)**② Amino Acid** Select Residue Type**② Annotation Type** Select Annotation Type And**② Range** Min Max[Clear Fields](#)[Search Protein Site](#)



## Site Search

Site Search

Tutorial

Clear Fields

Search Protein Site

## ② Amino Acid

## Select Residue Type

- A - Ala - Alanine
- ② C - Cys - Cysteine
- D - Asp - Aspartic acid
- ② E - Glu - Glutamic acid
- F - Phe - Phenylalanine
- G - Gly - Glycine
- H - His - Histidine
- I - Ile - Isoleucine
- K - Lys - Lysine
- L - Leu - Leucine
- M - Met - Methionine
- N - Asn - Asparagine
- P - Pro - Proline
- Q - Gln - Glutamine
- R - Arg - Arginine
- S - Ser - Serine
- T - Thr - Threonine
- U - Sec - Selenocysteine
- V - Val - Valine
- W - Trp - Tryptophan
- Y - Tyr - Tyrosine



GET STARTED  
Quick Search  
Try Me  
Composition Search

EXPLORE  
Glyca  
Prote

Site Search  
Super Search  
List of Motifs

SPARQL

GlyGen Mapper  
GlyGen Sand Box  
Structure Browser

Privacy Policy  
Disclaimer

About  
Media

Frameworks  
Beta Testing





## Site Search

Site Search

Tutorial

Clear Fields

Search Protein Site

## ② Amino Acid

N - Asn - Asparagine

## ② Annotation Type

Glycosylation



SNV



Select Annotation Type

And

## ② Range

Min

Max

Clear Fields

Search Protein Site

Feedback





## Site Search

Site Search Tutorial

Clear Fields Search Protein Site

② Amino Acid  
N - Asn - Asparagine

② Annotation Type  
SNV X Glycosylation X Select Annotation Type And

② Range  
Min 2 Max 2

Clear Fields Search Protein Site

Feedback

Show me all glycosylation sites that have an amino acid change at the +2 position of the NXS/T/C sequon

## Site Search Summary

Performed on: 2021/04/30 10:12:12

Annotation Type: SNV And Glycosylation  
Amino Acid: N  
Range: 2 to 2

[Update Results](#)   [Modify Search](#)

\*\* To perform the same search again using the current version of the database, click  
**"Update Results".**

 [DOWNLOAD ▾](#)

 Records per page 20 Showing 1 to 14 of 14 Results

1

UniProtKB Accession ↑↓	Hit Score ↑↓	Start Pos ↑↓	End Pos ↑↓	SNV	Glycosylation	Mutagenesis	Glycation	Phosphorylation
P50391-1	8.12	2	2	YES	YES	NO	NO	NO
Q8NGZ3-1	8.12	2	2	YES	YES	NO	NO	NO
P28566-1	8.12	2	2	YES	YES	NO	NO	NO
Q9NZP0-1	8.12	2	2	YES	YES	NO	NO	NO
O95977-1	8.12	2	2	YES	YES	NO	NO	NO
P08172-1	8.12	2	2	YES	YES	NO	NO	NO
Q8TDS7-1	8.12	2	2	YES	YES	NO	NO	NO
P25929-1	8.12	2	2	YES	YES	NO	NO	NO
Q8NE79-1	8.12	2	2	YES	YES	NO	NO	NO


Explore this

General
Glycosylation
Names
Function
Sequence
Single Nucleotide Variation
Mutagenesis
GO Annotation
Glycan Ligands
PTM Annotation
Proteoform Annotation
Pathway
Synthesized Glycans
Isoforms
Homologs
Disease
Expression Tissue
Expression Disease
Cross References
History
Publications

Explore this

LOOK AT

## Details For Glycoprotein P50391-1

Back

Download ▾

### General

Gene Name: [NPY4R](#)

Gene Location: Chromosome: 10 (46,465,881 - 46,461,099)

Ensembl Gene 1

UniProtKB ID: [NPY4R\\_HUMAN](#)

UniProtKB Accession: [P50391-1](#)

Protein Length: 375

UniProtKB Entry Name: Neuropeptide Y receptor type 4

Chemical Mass: 42,195 Da

RefSeq Accession: [NP\\_001265723.1](#)

RefSeq Name: neuropeptide Y receptor type 4

Organism: Homo sapiens (Human) [9606]

UniProtKB 1

## Sequence

ProtVista

+10 +20 +30 +40 +50

1 MNTSHLLALL LPKSPQ**G**ENR SKPLGTPY**N**F SEHCQDSVVD MVFIVTSYI ETVVGVLGNL  
61 CLMCVTVRQK EKANVTLNLI ANAT**S**U**M** CLLCQPLTAV YTIMDYWIFG ETLCKMSAFI  
121 QCMSVTVSIL **SLV**LVALERH QLIINPTGWK PSISQAVLCT VLIWVIACVL SLPFLANSIL  
181 ENVFHKNHSK ALEFLADKVV CTESWPLAHH RTIYTTFLLL FQYCLPLSTT LVCYARIYRR  
241 LQRQGRVFHK GTYSLRAGH**M** KQVNVLVVM VVAFAVLWLP LHVFNSLEDW HHEAIPICG  
301 NL**I**FLVCHLL AMASTCVNPF IYGFNLNT**N**FK KEIKALVLTC QQSAPLEEE HLPLSTVHTE  
361 VS**K**GLSLRSG RSNPI

N-linked Sites 4

O-linked Sites

Variation from mutation 22

Sequon 5

Explore this

## Single Nucleotide Variation

ProtVista

Feedback

Disease associated Mutations

Non-disease associated Mutations

Records per page

20

Showing 1 to 16 of 16 Results

1

Source	Filter Annotations ↑↓	Genomic Locus ↑↓	Start Pos. ↑↓	End Pos. ↑↓	Sequence ↑↓	Disease
BioMutant 1	Somatic mutation passed 1 out of 6 filters: patient freq. (1.4%).	Chr10:47086832	17	17	G → C	• breast cancer (DOID:16)
BioMutant 1	Somatic mutation passed 1 out of 6 filters: n-glyco-sequon-loss (NRS->NRI).	Chr10:47086845	21	21	S → I	• uterine cancer (DOID:3)
BioMutant 1	Somatic mutation passed 1 out of 6 filters: n-glyco-sequon-loss (NRS->NRI).	Chr10:47086845	21	21	S → N	• prostate cancer (DOID:260)
dbSNP 1						
ExAC 1						
TOPMed 1						

# Invitation to Explore Features, Provide Feedback, Contact with Questions

GlyGen

HOME EXPLORE ▾ QUICK SEARCH TRY ME DATA ▾ TOOLS ▾ HELP ▾ MORE ▾

Search...



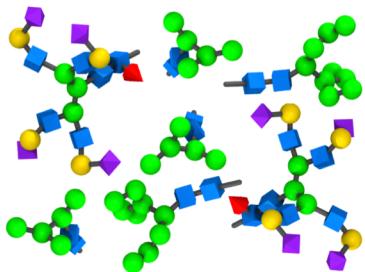
## GlyGen: Computational and Informatics Resources for Glycoscience

GlyGen is a data integration and dissemination project for carbohydrate and glycoconjugate related data. GlyGen retrieves information from multiple international data sources and integrates and harmonizes this data. This web portal allows exploring this data and performing unique searches that cannot be executed in any of the integrated databases alone.

HOW TO CITE

QUICK START

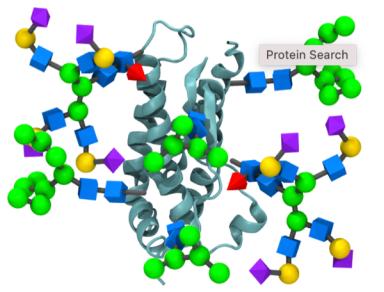
OUR MISSION



### Glycan Search

Search for glycan structures based on their chemical and structural properties.

[EXPLORE](#)



### Protein Search

Search for proteins based on their sequences, accessions, and annotations.

[EXPLORE](#)



### Site Search

Search for proteins based on their site and site annotations.

[EXPLORE](#)

### Version

Portal: 1.8 (19/Apr/2021)

Webservice: 1.8.48 (22/Apr/2021)

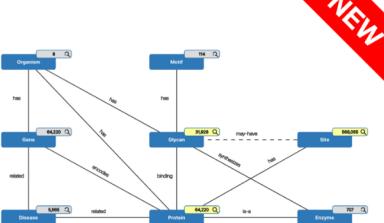
Data: 1.8.25 (19/Apr/2021)



### Quick Search

Quick Search provides multi-domain queries that are based on user requests.

[EXPLORE](#)



### Super Search

Super search is a graphical interface to build queries across all GlyGen datasets.

[EXPLORE](#)

### GlyGen Mapper

ID mapping related to glycan, protein / glycoprotein and based on the user input.

[EXPLORE](#)

### Your Opinion Matters



Please provide feedback and suggestions to help us improve the GlyGen portal and make it more useful for the community.

[LEAVE FEEDBACK](#)

### Database Statistics

#### Homo sapiens

Glycans	15855
Proteins	20609
Glycoproteins	9199

#### Mus musculus

Glycans	5842
Proteins	21989
Glycoproteins	3891

#### Rattus norvegicus

Glycans	4091
Proteins	21587
Glycoproteins	2111

#### Severe acute respiratory syndrome coronavirus 2

Glycans	1569
Proteins	17

- GlyGen was conceived and is designed to present novel opportunities for exploring informational links that cross disciplinary boundaries.
- As the diversity of data integrated into GlyGen increases, the opportunities to achieve this goal expand tremendously.
- The value of GlyGen to the biomedical community will be directly proportional to the quality of the data that it integrates.
- Therefore, our success is ultimately in the hands of those that we wish to serve.